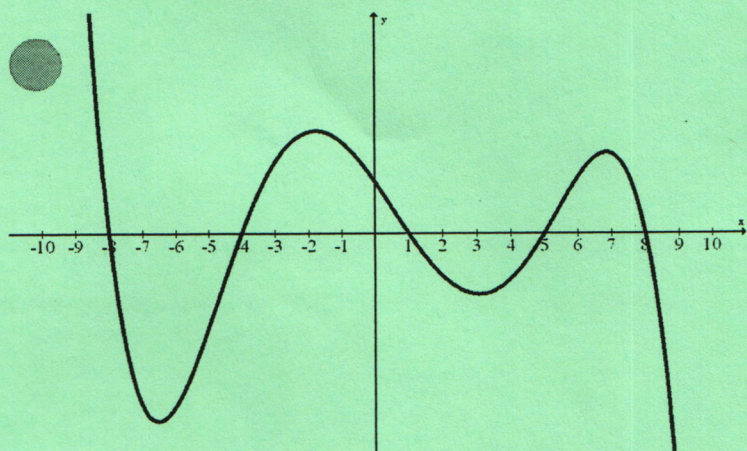


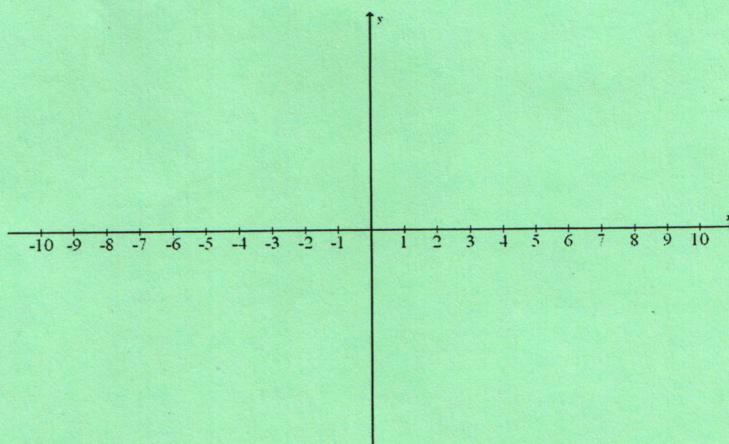
A) Write the equation of the graph shown:

$y =$ _____



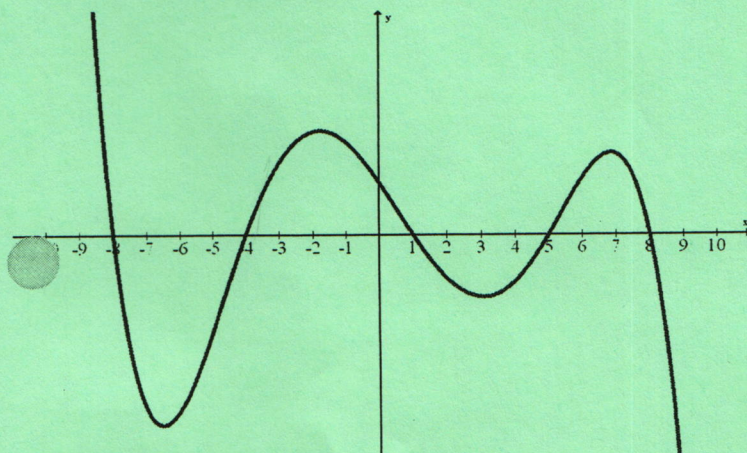
B) Sketch the graph of

$$y = -(x + 6)(x + 1)(x - 3)(x - 7)$$



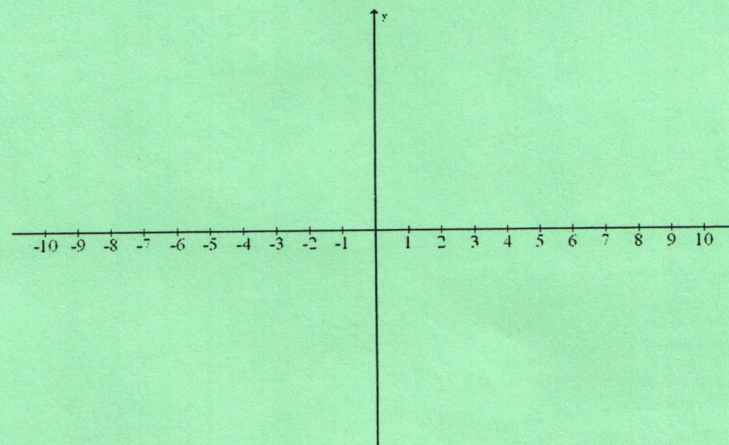
A) Write the equation of the graph shown:

$y =$ _____



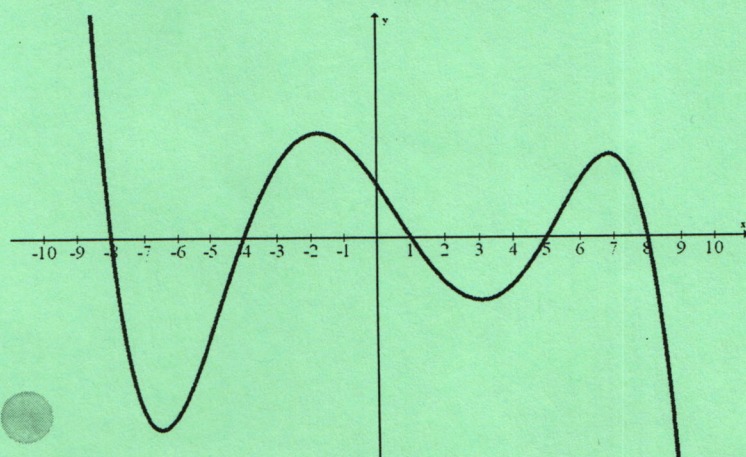
B) Sketch the graph of

$$y = -(x + 6)(x + 1)(x - 3)(x - 7)$$



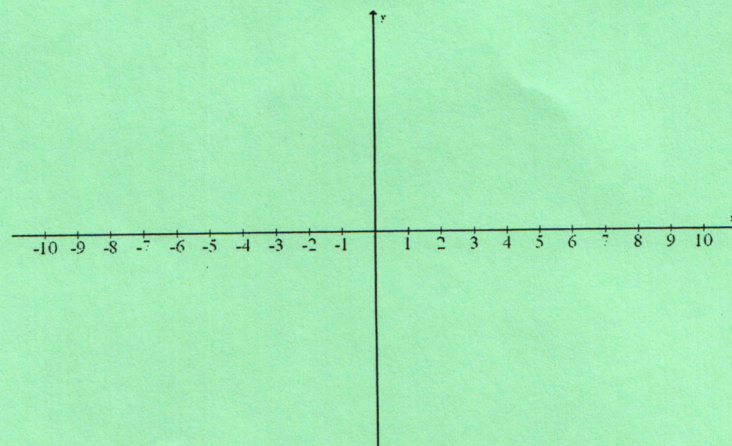
A) Write the equation of the graph shown:

$y =$ _____



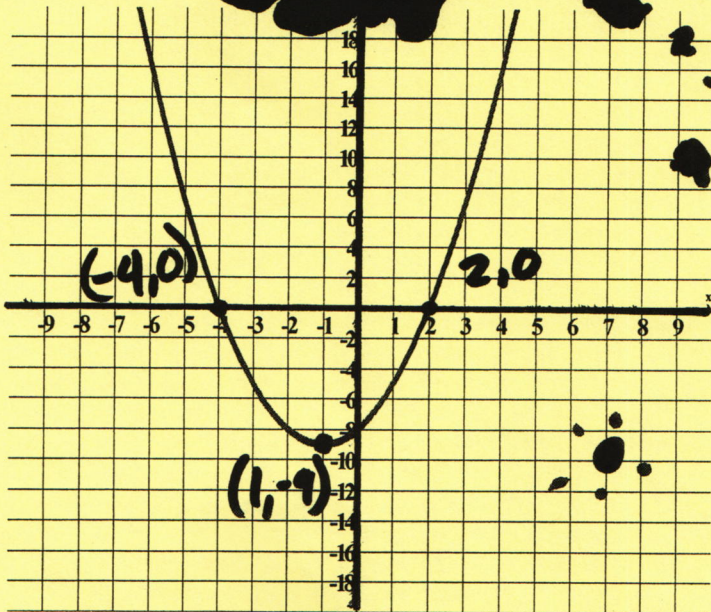
B) Sketch the graph of

$$y = -(x + 6)(x + 1)(x - 3)(x - 7)$$

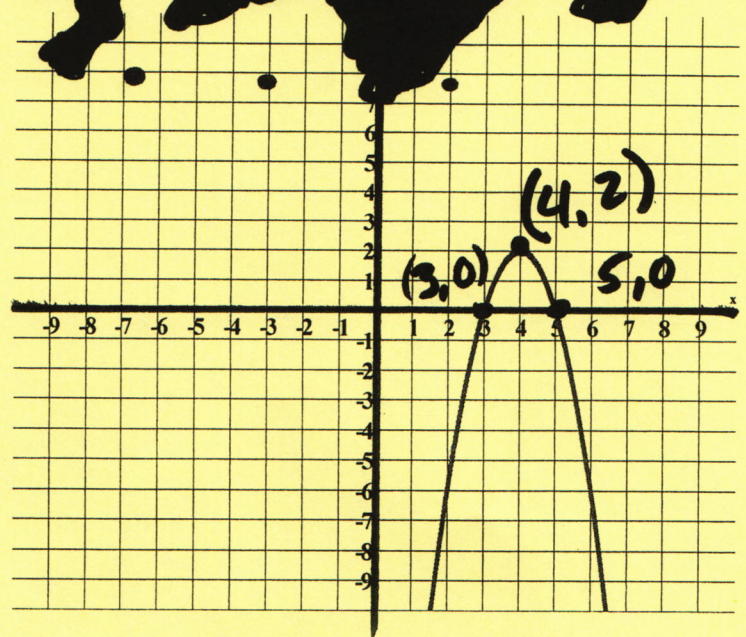


Anne's homework was to graph quadratic equations. She did her homework, but then spilled ink on the paper. Her paper now looks like this:

#23 $y = x^2$

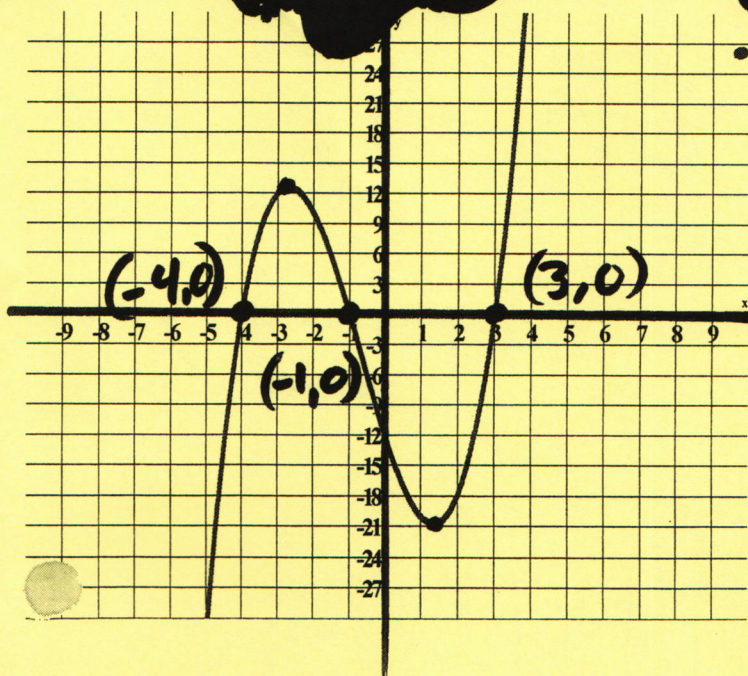


#24 $y =$

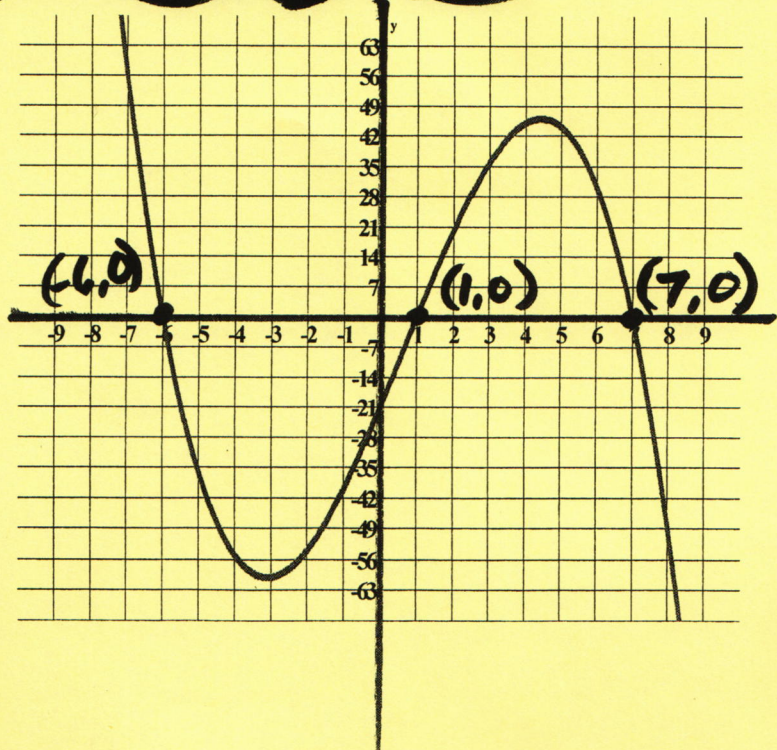


What were the equations that she graphed?

#25 $y =$



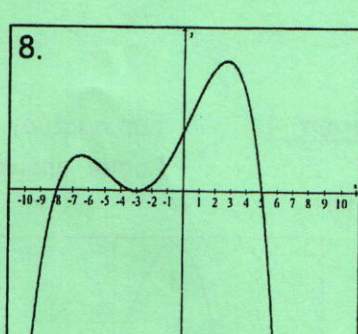
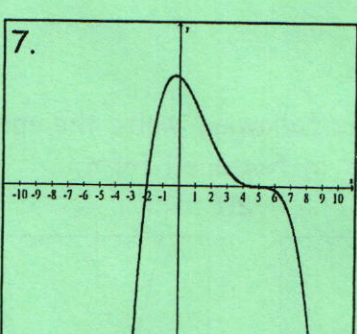
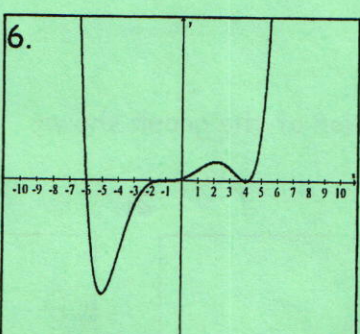
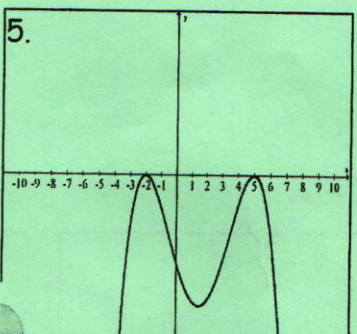
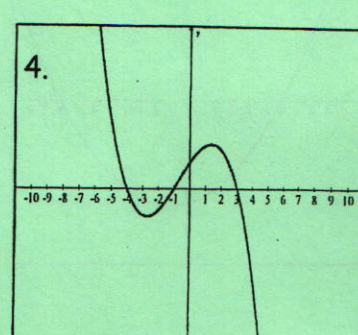
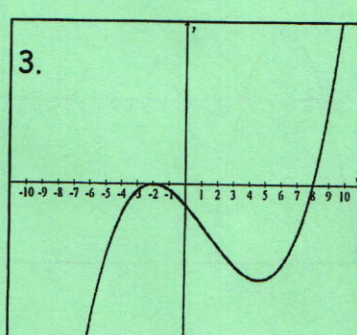
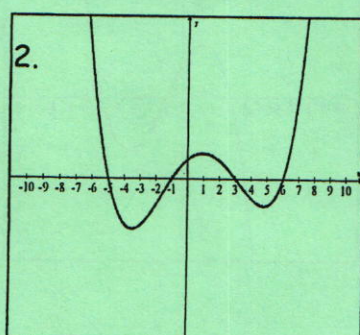
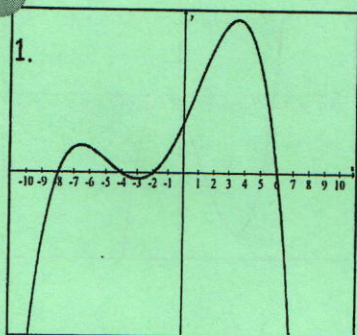
#26



Part 1

For each of the following, write the equation of the graph shown:

Leave answers in factored form.



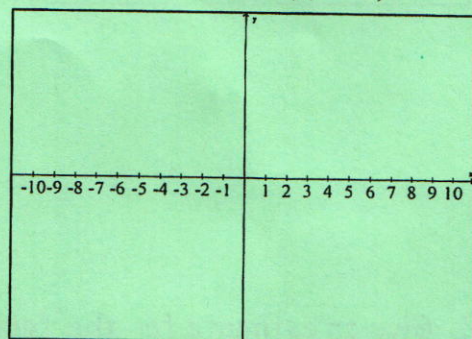
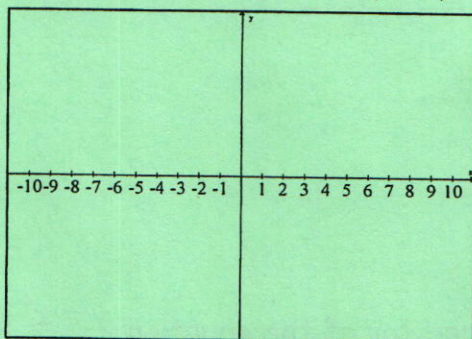
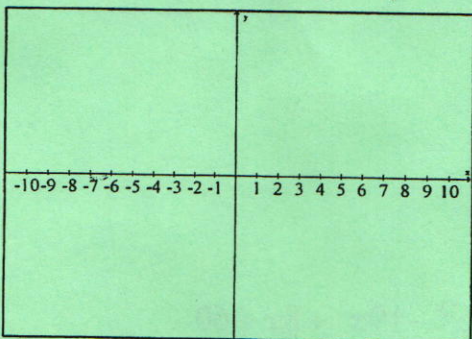
Part 2

Sketch a graph for each of the following equations. Without using your calculator.

9. $f(x) = (x-5)(x+2)(x+7)$

10. $f(x) = (x+2)(x+1)^2(x-8)$

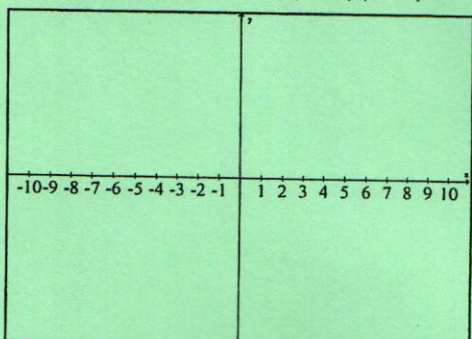
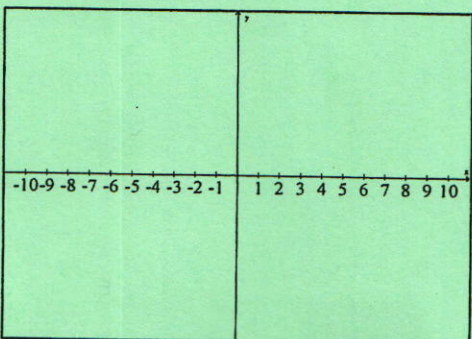
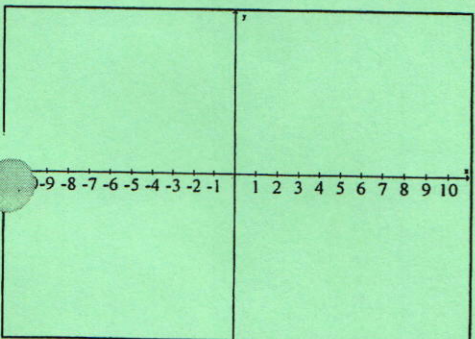
11. $y = (x+4)^3(x-1)(x-7)^2$



12. $f(x) = (-2)(x+1)(x+4)(x-5)$

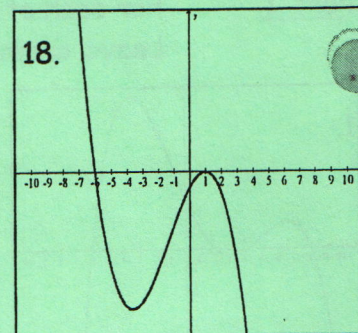
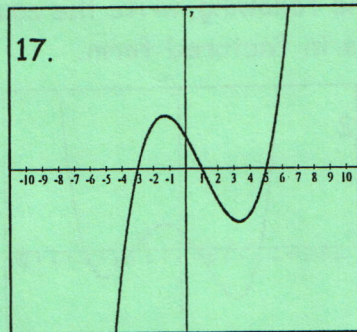
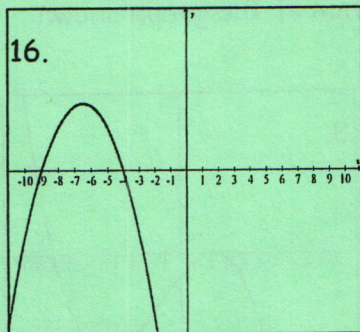
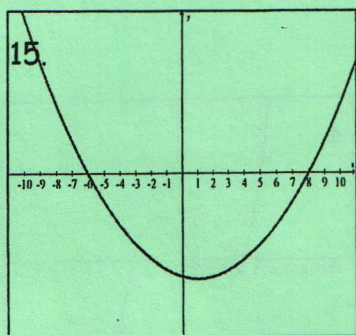
13. $y = (x+4)(x-6)^3$

14. $y = (-1)(x+3)(x+5)(x-2)(x-7)$



Part 3

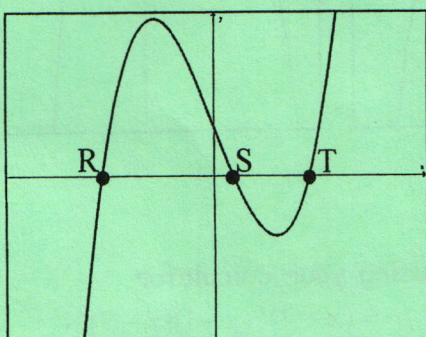
For each of the following, write the equation of the graph shown:
Write answers in STANDARD form.



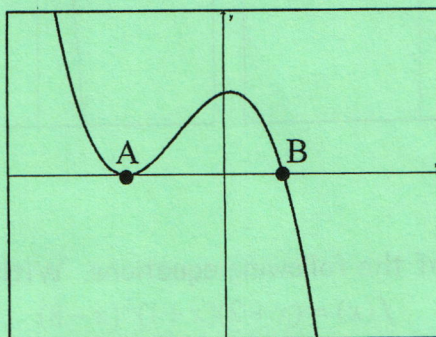
Part 4

For each of the following, write the equation of the graph shown.
Leave answers in factored form.

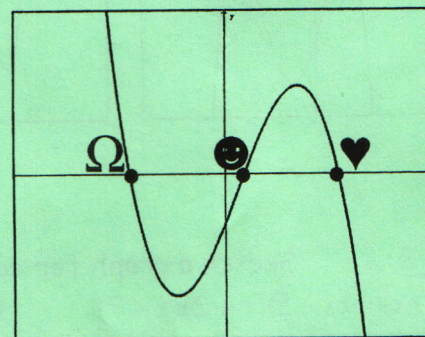
19.



20.



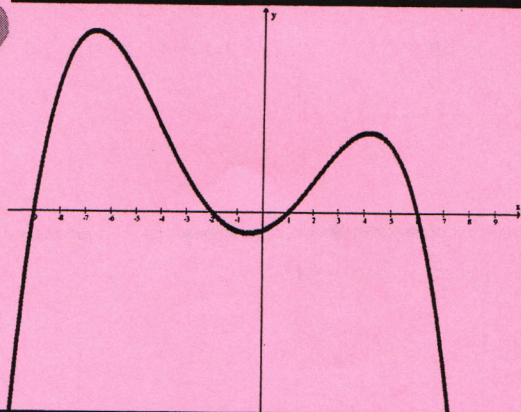
21.



22. Give an estimate for the factored form of the equation $y = x^4 - 2x^3 - 19x^2 + 8x + 60$
hint: graph it!

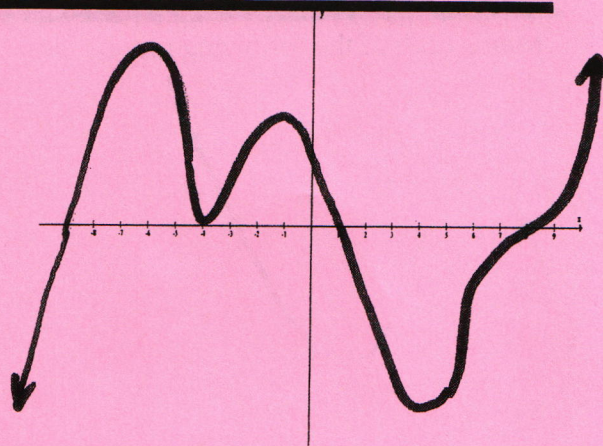
ALGEBRA 2 Hon.
WS Polynomial graphs

NAME _____
Period _____



1. Is there a double root / At what # is there a double root?
2. Is there a triple root / At what # is there a triple root?
3. What degree is this equation?
4. Are there imaginary solutions?
5. Write an equation for this graph.

6. Is there a double root / At what # is there a double root?
7. Is there a triple root / At what # is there a triple root?
8. What degree is this equation?
9. Are there imaginary solutions?
10. Write an equation for this graph.



Use your notes to identify the end behavior for this graph:

11. $y = -2x^5 + 3x^4 - 2x + 17$

$f(x) \rightarrow \underline{\hspace{2cm}}$ as $x \rightarrow -\infty$ and

$f(x) \rightarrow \underline{\hspace{2cm}}$ as $x \rightarrow \infty$

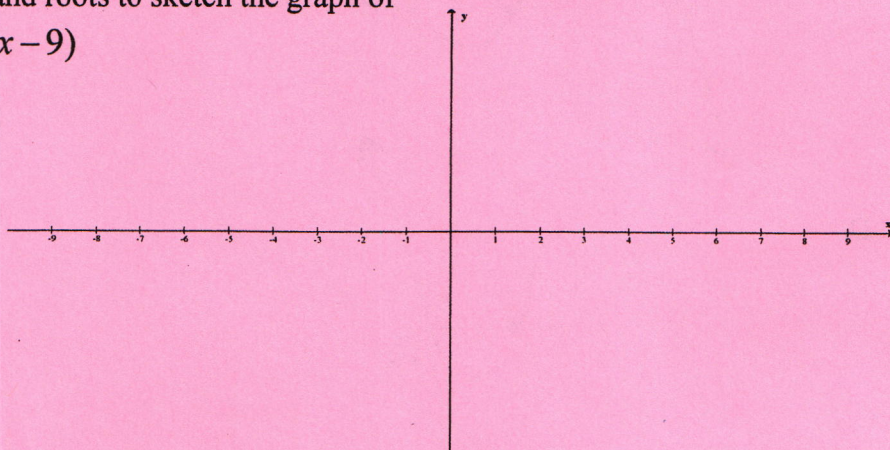
12. $y = (x + 7)^3(x + 2)(x - 1)^2(x - 5)(x - 9)$

$f(x) \rightarrow \underline{\hspace{2cm}}$ as $x \rightarrow -\infty$ and

$f(x) \rightarrow \underline{\hspace{2cm}}$ as $x \rightarrow \infty$

13. Use what you know about end behavior and roots to sketch the graph of

$y = (x + 7)^3(x + 2)(x - 1)^2(x - 5)(x - 9)$



If you graphed $y_1 = (x+7)(x-3)(x+2)$
 $y_2 = (x+7)(x-3)(x+2)(x+33)$

The graphs would look very similar. Name 2 things that would be the same and 2 that would be different.

SAME

- 1.
- 2.

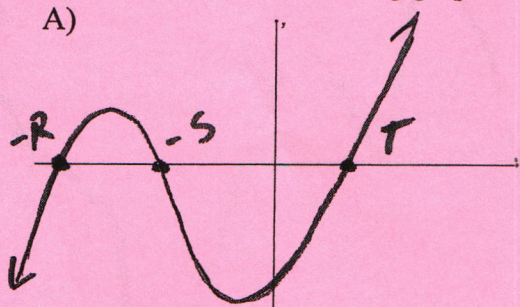
DIFFERENT

- 1.
- 2.

15. Give an estimate for the factored form of the equation $y = x^4 - 2x^3 - 19x^2 + 8x + 60$.
 hint: graph it!

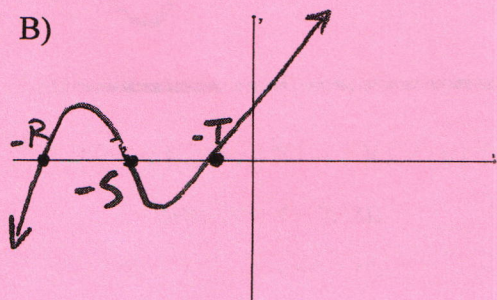
Match each of the following graphs with their equations

A)

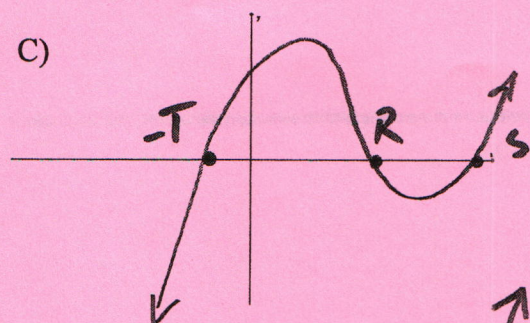


1. $y = (x+R)(x+S)(x+T) \cdot c$
2. $y = (x-R)(x-S)(x-T) \cdot c$
3. $y = (x+R)(x+S)(x-T) \cdot c$
4. $y = (x-R)(x-S)(x+T) \cdot c$

B)



C)



D)

